

WHAT IS CLAIMED IS:

1. A device-implemented software system for maintaining ventricular activation or contraction sequence to improve atrial and ventricular hemodynamics, the system comprising:

5 means for prolonging a first PAV interval subsequent to a sensed premature beat;

means for decrementing PAV intervals arising after said first PAV interval; and

10 means for identifying at least one of said PAV intervals that is equal to a programmed PAV interval.

2. The system of claim 1 wherein said means for prolonging includes means for extending the PAV interval subsequent to a non-conducted premature atrial event.

15 3. The system of claim 1 wherein said means of decrementing includes means for controlling subsequent PAV intervals to become shorter until said PAV interval is equal to the programmed PAV interval.

20 4. The system of claim 1 wherein said means for prolonging further includes means for simultaneous smoothing of the atrial and ventricular rates.

5. A method for maintaining ventricular activation or contraction sequence to improve atrial and ventricular hemodynamics, the method comprising:

25 prolonging a first PAV interval subsequent to a sensed premature beat; and

decrementing PAV intervals arising after said first PAV interval; and

30 identifying at least one of said PAV intervals that is equal to a programmed interval.